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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,491	06/09/2005	Gi-Bong Kwon	0630-2337PUS1	7065
2292 7590 12/20/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER BRANDT, MICHAEL J	
			ART UNIT 2837	PAPER NUMBER
			NOTIFICATION DATE 12/20/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

**Application No.**

10/538,491

**Applicant(s)**

KWON ET AL.

**Examiner**

Michael Brandt

**Art Unit**

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the refrigerator of claim 3 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 3 recites the limitation "an inside temperature of the refrigerator" in second line. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 6-7 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by USPgPub 2002/0113565 A1 (hereinafter Kim).

Regarding claims 1 and 11, Kim discloses (Figs. 2-4) an apparatus for controlling an operation of a compressor comprising: a control unit 401 for generating a control signal for selecting a main winding coil (e.g. when relay Ry5 is closed) of a linear motor 100A-1 of a compressor or an auxiliary winding coil (e.g. when relay Ry5 is open and one of relay Ry1-Ry4 is closed) are on the basis of load capacity [0018]; and a switching unit Ry5 for selecting the main winding coil (collectively coil MC and coils SC1-SC4) of the linear motor 100A-1 or the auxiliary winding coil (e.g. when relay Ry5 is open and one of relay Ry1-Ry4 is closed) on the basis of the control signal [0019];

wherein the main winding coil (collectively coil MC and coils SC1-SC4) of the linear motor 100A-1 is divided into a plurality of auxiliary winding coils (MC and SC1-SC4).

Regarding claim 2, Kim discloses (Figs. 2 and 3) the control unit 401 generating the control signal for selecting the winding coil of the linear motor 100A-1 or the auxiliary winding coil (e.g. when relay Ry5 is open and one of relay Ry1-Ry4 is closed) when a voltage applied to the linear motor is varied [0038].

Regarding claim 6, Kim discloses (Figs. 2 and 3) the control unit 401 generating a control signal for selecting the main winding coil (collectively coil MC and coils SC1-SC4) of the linear motor 100A-1 or the auxiliary winding coil (e.g. when relay Ry5 is open and one of relay Ry1-Ry4 is closed) in order to control the amount of currents flowing into the winding coil of the linear motor 100A-1 [0031].

Regarding claim 7, Kim discloses (Fig. 3) the switching units Ry1-Ry5 being relays [0019].

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-5, 8-10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and further in view of USPN 4,724,680 (hereinafter Kawai)

Kim discloses the limitations of claim 1 as noted above, however, Kim does not expressly disclose outputting a control signal based on at least one of the inside temperature of the refrigerator and the ambient temperature or comparing either of those temperatures to a predetermined reference temperature value. It should be noted, however, that Kim does disclose that an object of his invention is to provide a motor for varying cooling and heating capacity of a reciprocating compressor...to cope with a load and a voltage change [0018] and further discloses (Fig. 4) that the cooling power of his invention is varied depending on the winding chosen, e.g. choosing a coil corresponding to a higher cooling power when more cooling is needed.

Kawai discloses a temperature monitoring system (col. 1, lines 21-24) wherein the temperature inside a refrigerated space (col. 3, lines 38-43) is compared to a reference temperature value (col. 3, lines 46-58) wherein the capacity of the compressor is changed through an inverter device in response to changes of an air conditioning load within a certain space (col. 1, lines 10-13).

At the time of invention, it would have been obvious a person of ordinary skill in the art to combine the compressor controller and winding selection of Kim with the temperature sensing and driving methodology of Kawai. The motivation comes from the fact that Kim discloses that an object of his invention is to provide a motor for varying cooling and heating capacity of a reciprocating compressor [0018]. In addition, adding the sensing and driving methodology of Kawai helps provide an economical and efficient way of controlling the compressor of Kim in order to achieve its stated goal of varying cooling and heating capacity.

Regarding claims 3, 8 and 12-13, Kawai discloses (Fig. 3) an apparatus for controlling an operation of a compressor 11 wherein the load capacity is determined based on at least one of an inside temperature of the refrigerator and an ambient temperature (col. 3, lines 38-43) and wherein power is applied on the basis of an inside temperature of the refrigerator and a predetermined reference temperature value (col. 3, lines 46-58).

Regarding claims 4, 9 and 13, Kawai discloses (Fig. 3) controlling the inverter to operate the cooling mechanism in a high power mode (col. 3, line 68 and col. 4, lines 1-2) when the inside temperature of the refrigerator is greater than a predetermined reference temperature value (col. 3, lines 46-58).

Regarding claims 5, 10 and 13, Kawai discloses (Fig. 3) controlling the inverter to operate the cooling mechanism in a in a low power mode (col. 3, lines 66-68) when the inside temperature of the refrigerator is the same or smaller than the predetermined reference temperature.

Regarding claims 14 and 15, Kim discloses (Figs. 2 and 3) the control unit 401 generating the control signal for selecting the winding coil of the linear motor 100A-1 or the auxiliary winding coil (e.g. when relay Ry5 is open and one of relay Ry1-Ry4 is closed) when a voltage applied to the linear motor is varied [0038] and that the switching units Ry1-Ry5 are relays [0019].

***Response to Arguments***

8. Applicant's arguments filed on 9/10/2007 have been fully considered but they are not persuasive. In regards to Applicant's arguments concerning claims 1-2 and 6-7, Examiner agrees that the motor is indeed designated as 100A-1, however, the designation of which coil is the main coil and which coils are auxiliary (secondary) coils is arbitrary. As noted above, the main winding coil can be designated collectively to consist of coil MC and coils SC1-SC4. Designated in this way, any of the coils MC and SC1-SC4 can be identified as auxiliary coils, i.e. the main winding coil is divided into a plurality of auxiliary winding coils. Designated in this way, the main coil and the auxiliary coil can be selected in the alternative.

9. Applicant's arguments with respect to claims 3-5 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please consult the Notice of References Cited for further information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Brandt whose telephone number is (571) 270-1745. The examiner can normally be reached on Monday through Thursday 7:30a.m. - 6:00p.m. EST.

Application/Control Number:  
10/538,491  
Art Unit: 2837

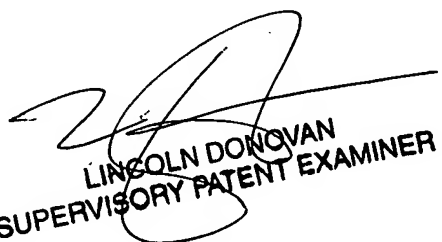
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER